

AMENDMENTS TO THE CLAIMS

In this Amendment and Reply, claims 1, 19, and 32 have been amended to more particularly define the invention.

1-5. (Cancelled)

6. (Currently amended) In an impulse radio, a method of rake receiving, comprising:
receiving a plurality of reflections of an impulse radio signal at a corresponding plurality of rake teeth;

sampling said plurality of reflections to produce a plurality of samples; ~~and~~
determining at least one figure of merit for one or more of said plurality of reflections
dynamically based upon said plurality of samples; and

determining placement of said plurality of rake teeth based on comparison of said at least one figure of merit without considering an initial threshold value ~~expected impulse radio characteristic determined during a rake training period.~~

7. (Previously presented) The method of claim 6, further comprising:
performing a data demodulation computation based upon the samples and the at least one figure of merit.

8. (Previously presented) The method of claim 7, further comprising:
excluding, during the data demodulation computation, the samples corresponding to at least one of said plurality of reflections.

9. (Previously presented) The method of claim 8, wherein the excluding of the samples corresponding to at least one of said plurality of reflections is based on at least one of said at least

one figure of merit.

10. (Previously presented) The method of claim 7, further comprising:
updating at least one of the at least one figure of merit.
11. (Previously presented) The method of claim 10, wherein the data demodulation computation is based upon an updated one of the at least one figure of merit.
12. (Previously presented) The method of claim 6, further comprising:
confining a time offset of at least one rake tooth of said plurality of rake teeth to a corresponding at least one rake tooth placement zone.
13. (Previously presented) The method of claim 12, further comprising:
adjusting the at least one rake tooth placement zone corresponding to said at least one rake tooth based upon said at least one figure of merit corresponding to said at least one rake tooth.
14. (Previously presented) The method of claim 6, further comprising:
placing at least one time offset to maximize the energy captured by said at least one rake tooth.
15. (Previously presented) The method of claim 14, further comprising:
determining the at least one time offset dynamically based on samples of said plurality of impulse radio signal reflections at a corresponding one of said at least one rake tooth.

16. (Previously presented) The method of claim 14, further comprising:
determining time offsets for two or more of said plurality of rake teeth in parallel.
17. (Previously presented) The method of claim 6, further comprising:
determining a variance of the samples of said plurality of reflections at a corresponding one of said plurality of rake teeth, wherein the at least one figure of merit is determined based upon the variance of the samples of said plurality of reflections at the corresponding one of said plurality of rake teeth.
18. (Previously presented) The method of claim 6, further comprising:
determining an approximation of a variance of the samples of said plurality of reflections at a corresponding one of said plurality of rake teeth, wherein the at least one figure of merit comprises the approximation of the variance of the samples of said plurality of reflections at the corresponding one of said plurality of rake teeth.
19. (Currently amended) An impulse radio receiver, comprising:
sampling circuitry that samples a plurality of reflections of an impulse radio signal at a plurality of rake teeth to produce a plurality of samples; ~~and~~
figure of merit determination circuitry that dynamically determines at least one figure of merit based on the plurality of samples; and
rake tooth placement circuitry that determines placement of said plurality of rake teeth based on comparison of said at least one figure of merit without considering an initial threshold
~~an expected impulse radio signal characteristic determined during a rake training period.~~

20. (Previously presented) The impulse radio receiver of claim 19, further comprising:
demodulation computation circuitry that demodulates data based upon the samples and
the at least one figure of merit.
21. (Previously presented) The impulse radio receiver of claim 20, wherein the samples
corresponding to at least one of said plurality of reflections are excluded during data
demodulation.
22. (Previously presented) The impulse radio receiver of claim 21, wherein the samples
corresponding to at least one of said plurality of reflections are excluded based on at least one of
said at least one figure of merit.
23. (Previously presented) The impulse radio receiver of claim 21, wherein at least one of the
at least one figure of merit is updated.
24. (Previously presented) The impulse radio receiver of claim 23, wherein the data
demodulation is based upon an updated one of the at least one figure of merit.
25. (Previously presented) The impulse radio receiver of claim 19, wherein a time offset of at
least one rake tooth of said plurality of rake teeth is confined to a corresponding at least one rake
tooth placement zone.
26. (Previously presented) The impulse radio receiver of claim 25, wherein the at least one
rake tooth placement zone corresponding to said at least one rake tooth is adjusted based upon
said at least one figure of merit corresponding to said at least one rake tooth.

27. (Previously presented) The impulse radio receiver of claim 19, wherein at least one time offset is placed to maximize the energy captured by said at least one rake tooth.
28. (Previously presented) The impulse radio receiver of claim 27, wherein the at least one time offset is determined dynamically based on samples of said plurality of reflections at a corresponding one of said at least one rake tooth.
29. (Previously presented) The impulse radio receiver of claim 27, wherein time offsets for two or more of said plurality of rake teeth are determined in parallel.
30. (Previously presented) The impulse radio receiver of claim 19, wherein the at least one figure of merit is determined based upon the variance of the samples of said plurality of reflections at a corresponding one of said plurality of rake teeth.
31. (Previously presented) The impulse radio receiver of claim 19, wherein the at least one figure of merit comprises an approximation of the variance of the samples of said plurality of reflections at a corresponding one of said plurality of rake teeth.
32. (Currently amended) A method of rake receiving in an impulse radio, comprising
receiving a plurality of reflections of an impulse radio signal at a plurality of rake teeth;
sampling said plurality of reflections of the impulse radio signal to produce a plurality of samples;
determining a plurality of figures of merit corresponding to the plurality of rake teeth,
each one of said plurality of figures of merit being determined dynamically based upon said
plurality of samples ~~without considering an expected impulse radio signal characteristic
determined during a rake training period;~~

determining a best figure of merit of said plurality of figures of merit; and
determining whether to exclude at least one of said plurality of rake teeth from a
demodulation computation based upon a comparison of its corresponding one of said plurality of
figures of merit to the best figure of merit without considering an initial threshold.

33. (Previously presented) The method of claim 32, further comprising:
performing a demodulation computation based upon samples of those of said plurality of
rake teeth that are not excluded.